

Food Safety and Health and Safety in The Workplace Level 1

English

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Level 1

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Introduction

This booklet covers an important part of the mandatory training for food handlers in the Kingdom of Saudi Arabia.

The booklet contains the information you will need to pass a certification test at the end of training, and provide you with the basics of food safety in line with the first level of food safety.

The booklet is designed to increase food hygiene levels and hygiene awareness amongst food handlers due to an increased demand for all the aspects of food hygiene especially for hotels, restaurants, hospitals, cafeterias, catering companies, retails and all other food industries. Study the food and water risks and concern about food born diseases, microorganisms transmitted diseases and methods to control in food establishments.

In addition, the booklet describes the causes of food contamination and the agents involved in food safety hazards. Define potential contamination during food processing and to discuss ways of control and treatment of contamination during storage and handling.

Define risks imposed by the food handler and to increase awareness of the importance of personal hygiene to ensure safe food. Increase awareness of the food handler of the hazards associated with incorrect housekeeping practices and the difficulties in hygiene maintenance. The hazards associated with pests are also defined and corrective actions stated.

To give an overview of the implementation of a food safety management system based on Hazard Analysis and Critical Control Point (HACCP) principles.

Define the responsibilities towards food safety and the legal implications of any breach such responsibilities.

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As a professional food handler one of the most important factors you need to consider is the safety of the food you produce or handle.

Your customers need to know they can trust that the food they buy from you will not make them sick.

The importance of food safety

We all need to eat and drink to stay alive, So it is important that our food does not harm us in any way.

As a food handler, you play a very important part in protecting consumers from harm. When working with food, you must make sure that nothing in the food you prepare, serve or sell to consumers can cause harm.

Safe food

Safe food is a food free of contaminants , which does not cause harm or disease to humans in the long term or short term.

All food handlers have to know how to work safely with food and use the right tools for the job to get safe food.

What happen if you do not keep food safe

- Customer complains
- Incompatibility with the law
- Lost of food
- Lost business

What happen if you keep food safe

- Customer satisfaction
- Compliance with the Law
- Increase shelf-life of food
- Increase business



Food hygiene

- Protect the food from contamination
- Prevent contamination from multiplying or spread
- Effective removal (destroy) of contaminants



As a food handler, you must do everything you can to keep food safe.

Food safety principles

Food safety principles assure that food will not cause harm to the consumers when it is prepared and/or eaten according to its intended use.

Food safety principles means all conditions and measures necessary to ensure the safety and suitability of food at all stages of handling the food beginning from purchase and the receipt of raw food materials to consumption.

Food hazards

A food hazards is any thing that could cause harm to the consumer. There are hazards all around the food premises. The three main types of food hazards are:

- Biological hazards: bacteria, viruses, mold, parasites, poisonous plants, and fish that carry harmful poisons.
- Chemical hazards: pesticides, food additives, preservatives, cleaning supplies, toxic metals,
- Physical hazards: items that accidentally get into food, such as hair, dirt, metal staples, and broken glass, as well as naturally occurring objects, such as bones.

Food Contaminations

Food contaminate when any foreign objects not added to the food intentionally, but is transferred to it through the surrounding environment, therefore negatively affected its safety or validity.

Contaminated food contains hazards that are either naturally present or that were introduced due to poor handle of food safely.



Food poisoning

Food poisoning is an acute disease that occurs by ingestion of food contaminated with bacteria, intestinal viruses or toxics (Poisons) produced by the fungus or bacteria, chemical and toxic plants.

Food poisoning is a diseases suddenly shows symptoms in the form of stomach pain, diarrhea, vomiting, fever and sever exhaustion, these symptoms are treated at home, but sometimes lead to hospitalization and rarely lead to death.

In some cases of food poisoning symptoms may appear in the form of paralysis of the nervous system next to the intestinal disorder.

The symptoms, severity of infection, body temperature and the period necessary for the emergence of symptoms depended on the nature of poisoning reason and the amount of contaminated food intake and human immunity.

Symptoms can develop rapidly, within one hour to 36 hours and for as long as from a day to a week. Anybody can get Food Poisoning illness. However, some people are more susceptible than others. People who are more likely to get food poisoning illness are:

1. Infants and preschool age children are at risk because their stomachs produce less acid, making it easier for bacteria and viruses to multiply.
2. Pregnant women are at risk because changes in metabolism and blood circulation may increase the risk of food poisoning.
3. People who are chronically ill or who take medication that affects their immune system.
4. The elderly because of inadequate nutrition, lack of protein in their diets, or poor blood circulation.

The most common symptoms of food poisoning are:

- Vomit.
- Diarrhea.
- Cramps and pain in the stomach.
- High temperature.



Food poisoning may occur as a result of Mycotoxin (poison) produced by some fungi like mushrooms *Aspergillus*.

Microbial food poisoning

Microbial food poisoning (microbial infection) is the main causes of food poisoning incidents;

1. Infections Incidence of the disease by eating food that contains large numbers of microbes that penetrate the mucous membrane of the intestines, and then show symptoms of the disease.

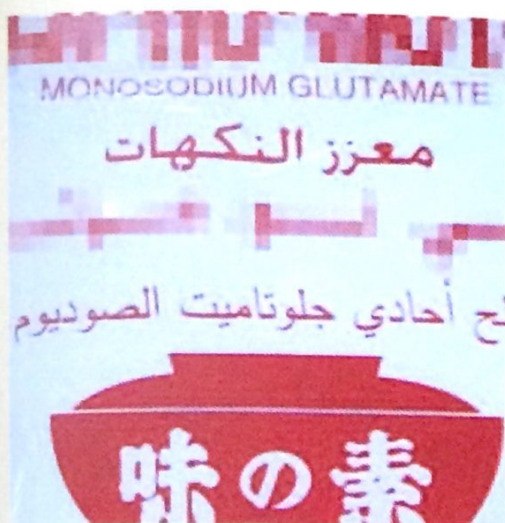
Example of this type *Salmonella* infection found in the intestines of many animals around. And there by increase their access to food and water. In particular, meat, poultry, eggs and dairy products.

2. Intoxications Incidence by toxins (poisons) produced by microbes during the reproduction and decay in the food, these toxins and not the microbes causes disease to humans.

Example of this type is *Botulinus* intoxication cause paralysis of the nerves. And occurs as a result of toxins (poisons) secreted by the microbe *Clostridium botulinum* in food. There is also a Mycotoxin poisoning produced by some fungi such as *Aspergillus*.

3. Toxin-Mediated Infections occurs through eating food that contains large numbers of microbes that reach the intestine of human, and produce toxins (poisons). And thus show symptoms of the disease.

Example of this type is microbe *Clostridium perfringens* source of soil and human feces.



Large quantities of monosodium glutamate salts caused food poisoning in less than an hour.

Chemical food poisoning

Chemical food poisoning is an important source of food poisoning and can be summarized in the following sources:

Metals

When foods are stored in improper containers made of materials like tin, lead, copper and zinc. These metals can dissolve in acid foods such as fruit juices and produce fast acting poison in the body when ingested.

Pesticides

Occurs as a result of contamination of vegetables or fruit when sprayed with pesticides and as a result of misuse of insecticides.

Cleaning agents

When lack of proper rinse after use which could result in the transfer of those chemicals to food.

Food additives

Materials are added to foods to improve or change its characteristics in terms of taste and smell, texture, and increase the validity period. It is known that the use of these materials according to set percentages do not cause harm to health. When used in large quantities they may cause poisoning.



Some shellfish poisoning causes paralysis of the nervous system as a result of toxins (poisons) in them.



Some wild mushrooms types as red, green, black and brown can causes food poisoning.

Natural food poisoning

Poisoning occurs as a result of natural toxins (poisons) found in some fishes, shellfishes and plants.

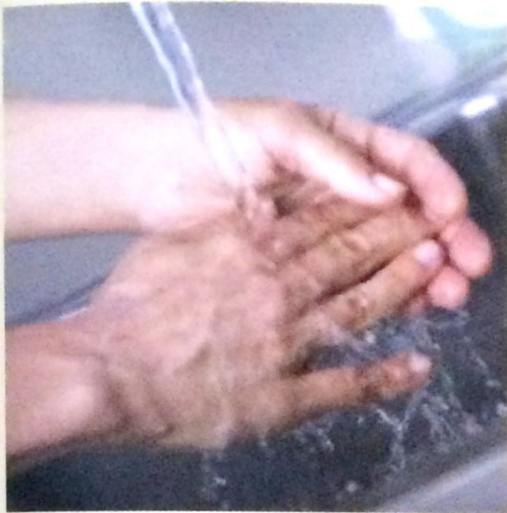
Poisoning fishes and shellfishes

Where poisoning occurs from eating some poisonous fishes, shellfishes. (Chicken Fish, Stonefish, Puffer Fish and Mussels) shellfish poisoning causes paralysis of the nervous system as a result of toxins in them. Which affect the nervous system of human.

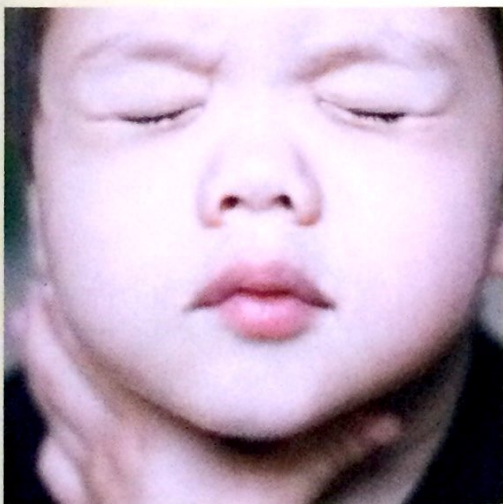
Poisoning plants

Such as eating some types of mushrooms which are often colored as red, green, black and brown.

In some cases, persons infected with some type of allergy is diagnosed as a severe case of food poisoning due to eating some types of beans and red kidney beans and some types of Cranberry.



Poor hand washing is a major cause of fecal-oral contamination in many places.



Entry of foreign objects unintentionally into food can cause choking.

Long duration foodborne diseases

Foodborne diseases caused by agents that enter the body through ingestion of food and can lead to health problems (chronic) or death.

Mainly caused by bacteria and viruses, but differ from food poisoning diseases and show symptoms more severe than symptoms of food poisoning with an incubation period to be longer, usually extended for a longer period. The incubation period for most of them from weeks to months.

The most transmission way of these diseases are fecal-oral contamination through sewage water or wastewater.

Most common foodborne diseases are:

- Typhoid fever
- Campylobacter enteritis
- Listeriosis
- Hepatitis A

Injuries

Injuries occur as a result of entry of foreign objects unintentionally into food (metal parts in the meat from meat grinder minced) or found naturally (the bones in the fish).

These foreign substances can cause:

- Choking or broken teeth if a hard object falls into the food.
- Cuts inside the mouth if a sharp object is eaten.
- A feeling of disgust if something is found in food that should not be there.



Food allergy can kill. As a minute amount can trigger a reaction called anaphylaxis.

Food allergy

Food Allergy is unusual sensitivity to food which is harmless to most people.

Symptoms may include skin hives, rashes and itching, swelling and itching of the lips and tongue, vomiting and diarrhea, difficulty breathing wheezing.

Symptoms appear within a five minutes to two hours after a person has eaten the food to which he or she is allergic.

Contamination of food is not the major source of food allergy (Not like acute and long duration food born diseases or injuries).

Common cause food containing

- Fish
- Shellfish
- Egg
- Peanuts
- Wheat proteins
- Soya beans
- Milk
- Tree nuts
- Sesame seeds.

Control measures include

- Separation between food types.
- Ingredients identification, labels on packages and menus.
- Effective hand washing.
- Commitment to customers orders accurately.



Most bacteria are harmless and used some of them are useful in food industries such as dairy processing and cheese and some like those necessary in the intestinal tract, which helps in digestion and a few of them harmless, and some types called spoilage bacteria can make food go (off) by changing its color, smell or taste or texture.

However, the harmful bacteria that cause foodborne diseases are known as pathogenic bacteria will often not smell, taste or look make any different to food that has been contaminated.

Biological contamination

The presence of microorganisms or their toxins (poisons) on the surface of food or inside as a result of poor or un hygienic food production, preparation, treatment or packaging.

Bacteria

Of all the microorganisms, bacteria are the greatest threat to food safety and they are responsible for most cases of food poisoning. Bacteria are single-celled, living organisms that can grow quickly at favorable temperatures.

Some species can produce and secrete toxins (poisons) in food, bacteria represent a threat, if their presence in large quantities or the presence of toxins (poisons) in food.

Where bacteria come from?

Bacteria are found everywhere

- All raw foods (Raw vegetables, raw meat, raw poultry, raw fish, raw eggs, and raw milk.).
- Pests.
- Waste and sewages.
- Soil.
- Dirt and dust.
- Contaminated water.
- And people.



Many raw foods, particularly meat and poultry, will contain pathogens.

What makes bacteria grow?

Many food-poisoning bacteria have to multiply to high numbers in food before they are likely to cause illness. The four main requirements for bacterial growth are food, moisture, warmth and time.

Food

The foods in which pathogens like to multiply are normally nutritious foods. These include meat, poultry, fish (particularly shellfish), cooked rice and pasta, milk products and eggs and also any foods which contain these as an ingredient such as meat pies, sandwiches, gravy, salads, etc.

Pathogens will grow in both raw and cooked foods. Many raw foods, particularly meat and poultry, will contain pathogens. Most such foods are cooked before consumption and thorough cooking will kill pathogens, making the food safe to eat. The consumption of foods which have not been cooked or heat-treated, however, may lead to food-poisoning.

The following foods have often been implicated in outbreaks:

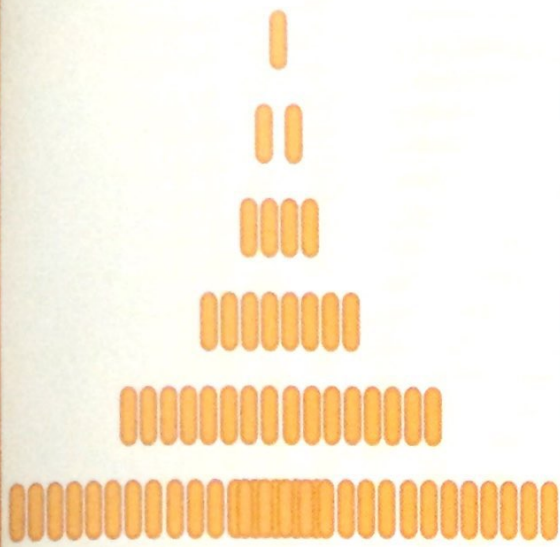
- unpasteurized dairy products such as milk and cheese;
- foods containing raw eggs such as mayonnaise and certain desserts
- uncooked shellfish such as oysters and mussels.

Moisture

Most foods naturally contain sufficient moisture to provide bacteria with the water they need in order to grow. Where moisture has been deliberately removed (e.g. in dehydrated foods such as milk powder, soup mixes, etc.), then bacteria will not grow whilst the food remains dry, but once water is added then bacterial growth may occur once more.



Bacteria can not grow in dehydrated foods such as milk powder.



Under the right conditions, bacteria can double every 10 to 20 minutes.

A single bacterium will double with each division—two become four, four become eight, and so on. A single cell can become millions in hours.

Warmth / Temperature

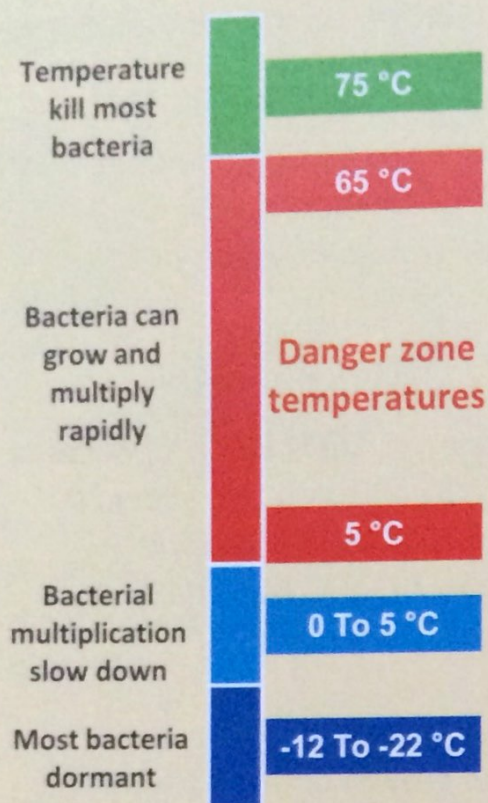
Most pathogens, like warmth. They will grow at temperatures between 5 °C and 65 °C, commonly referred to as the growth or 'danger' zone and have an optimum temperature for growth of about 37 °C.

Time

In ideal conditions (i.e. in moist foods at 37 °C) bacteria will grow and multiply by dividing into two every 20 minutes. After 6 hours, in ideal conditions, one bacterial cell could become 131,072 bacteria.

Time-temperature

It is important to limit the growth of these bacteria, usually by controlling one of these four conditions, in particular the control of time and temperature (time-temperature factor is can be effective).



The effect of temperature on food poisoning bacteria

The effect of temperature on food poisoning bacteria

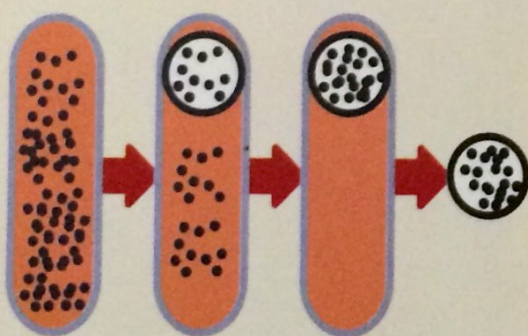
The effect of temperature on the growth and reproduction of bacteria are as follows:

- In freezers where the temperature of -12 to -22 °C, most bacteria dormant (inactive).
- In refrigerators, where the cooling temperature of 0 to 5 °C, most bacterial multiplication slow down.
- In the range where the danger zone temperatures of 5 to 65 °C, bacteria can grow and multiply rapidly.
- In hot holding units for hot food, where the temperature is from 65 to 75 °C, stop the vital functions of bacteria and begins to die.
- When cooking, where the temperature is higher than 75 °C, temperature kill most bacteria.

Spores

Some types of bacteria form spores as a kind of protective coating to survive high cooking temperatures and other conditions such as dehydration and disinfection.

Bacteria do not multiply when they are in spore form but as soon as conditions improve, the bacteria emerge from their spores and free to resume multiplication.



Some types of bacteria form spores as a kind of protective coating to survive unfavorable conditions.



High-risk foods must be stored at the top of the fridge and they must always be kept separate from raw foods.

High risk foods

High-risk foods are ready-to-eat foods which support the multiplication of pathogenic bacteria and are intended to be eaten without cooking or other process which would destroy these bacteria.

Most of these foods are cooked foods. They must be protected from contamination and require chilled or frozen storage or heat holding above 64 °C to prevent bacteria multiplying.

They are usually stored at the top of the fridge and they must always be kept separate from raw foods.

Examples of high risk foods

- Cooked meat and poultry.
- Cooked meat products such as meat pies, pasties, pate and gravy.
- Dairy produce such as milk, cream, artificial cream, custards and products containing unpasteurised milk.
- Shellfish and other sea-foods such as mussels, cockles, cooked prawns and raw oysters.
- Farinaceous dishes including cooked rice, pasta and couscous.
- Green salads, particularly containing mayonnaise.



Raw eggs should always be kept cold below 5 °C to prevent bacterial growth.

The most common food poisoning bacteria

Salmonella

The most food carrying

- Meat
- Poultry
- Eggs and dairy products.

Incubation period

12-36 hours.



Clostridium perfringens called Cafeteria germ, because they are often associated with catering where foods are prepared in advance for a lot of people and improperly holding temperatures above 64 °C.

Clostridium perfringens

The most food carrying

- Meat
- Poultry
- Meat soup.

Incubation period

10-12 hours.



Cooked or fried rice, which held at room temperature provides the opportunity for the growth of the *Bacillus cereus* and produce toxins.

Bacillus cereus

The most food carrying

- Puddings.
- Cereal products.
- Different kinds of cooked rice.

Incubation period

1-5 hours.



Of the most common sources of the *Staphylococcus aureus* respiratory tract of humans, nose, skin and wounds, boils and ulcers.

Therefore, attention should be given proper health practices for workers when dealing with food.

Staphylococcus aureus

The most food carrying

- Cooked meat, poultry and their products.
- Cheese and liquid and dry milk.
- Salads containing potatoes, eggs, shrimp and meat soup.

Incubation period

1-6 hours.



Low-acidic foods are not packaged properly can carrying *Clostridium botulinum*.

Clostridium botulinum

The most food carrying

- Low-acidic foods are not packaged properly.
- Smoked fish and fish vacuumed packaged.
- Fermented foods.

Incubation period

12-36 hours.



Do not wrap or packing hot foods as bread as it causes steam condensation which accelerate mold growth.



Should be used only equipment and surfaces allow effective cleaning operations to avoid the growth of mould and must change surfaces unsuitable for use to prevent the growth of fungi.

Viruses

Viruses are micro-organisms that are even smaller than bacteria. They are carried on food and water but unlike bacteria they do not need the food or moisture for growth.

The main sources of viruses are sewage and polluted water. Viruses can contaminate any type of food, they are usually associated with:

- Water
- Shellfish
- Raw vegetables
- From person to person (fecal-oral).

Viruses are not affected by refrigerating and freezing.

Most viral foodborne illnesses

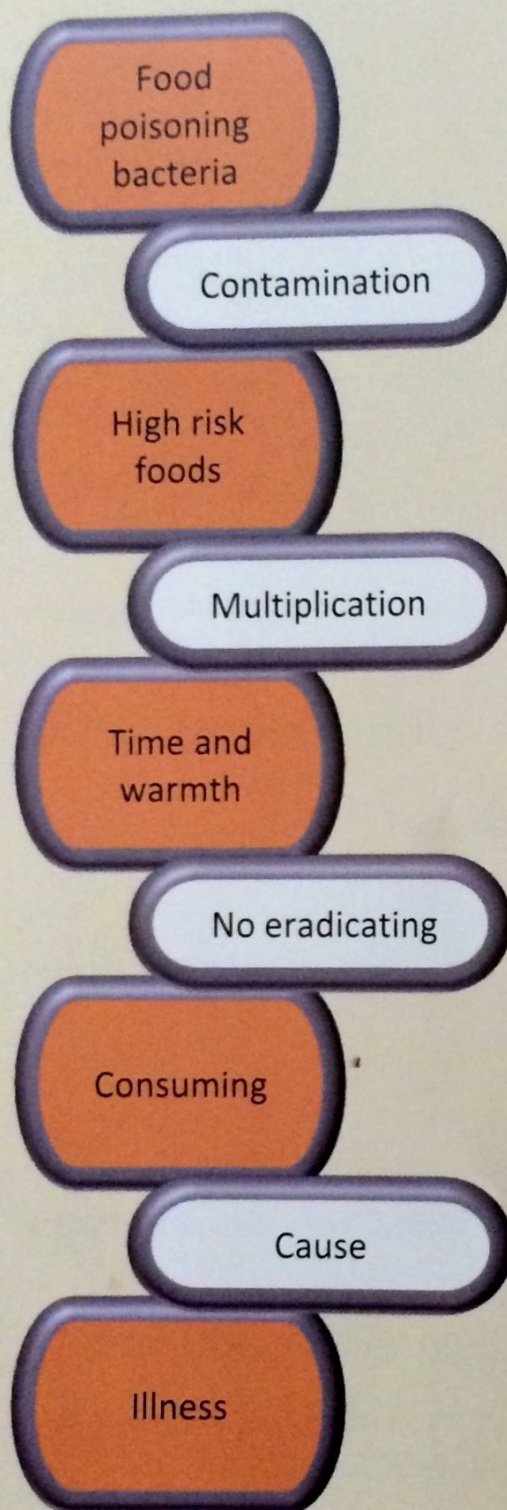
- Hepatitis A.
- Norovirus Gastroenteritis (Winter Vomiting Viruses).

Mold

Molds are common responsible for food spoilage. Some molds are forms toxins (poisons) that can cause illness as Aflatoxins.

Molds can grow in high acidic and low moist food.

Molds prefer ambient temperatures but continue to grow at temperatures below 0 °C.



Food poisoning chain

Food poisoning control

For prevention of food poisoning caused by microbial hazards need to control the following hazards:

- Microbial contamination
- Multiplication of microbes in food
- Survival of microbes in food

That is known as “broken food poisoning chain” by remove sources of contamination, break the routes of contamination, and eradicating or destroy the microbes.

Protect food from contamination

- Purchasing food from reputed suppliers only.
- Checking the conditions of delivery vehicles.
- Checking deliveries for freshness, temperature, colour, odour, contamination, infestations and satisfactory packaging and labelling.
- Separating raw and high-risk foods at all stages of preparing, storing, displaying and distributing.
- Separating equipment, utensils and working surfaces used for raw food and high-risk foods.
- Keeping food covered as much as possible.
- Avoid unnecessary handling of foods, food utensils equipment and surfaces.
- Using good personal hygiene practices.
- All surfaces, equipment and utensils should be cleaned and sanitized. Not using unsuitable, defective, or dirty equipment.
- Staff suffering from vomiting and diarrhoea must not be permitted to work.
- Promptly removing unfit or waste food and refuse from food areas.
- Preventing insects, animals and birds from entering food rooms.



All surfaces, equipment and utensils should be cleaned and disinfected to protect food from contamination.



Keeping high-risk foods out of the temperature danger zone to prevent multiplication of bacteria.



Adequately cooking food, to temperature 75 °C or higher to destroy bacteria.

Prevent multiplication of microbes

- Storing food immediately after delivery has been checked.
- Ensuring that during preparation, food is in the danger zone for as short a time as possible. High-risk foods must not be left sitting out at room temperature.
- Keeping high-risk foods out of the temperature danger zone.
- Using appropriate packing methods (as vacuum packing).
- Preventing dried foods from absorbing moisture.
- Wherever possible food must be cooked and served immediately.

Destroy the microbes

- Adequately cooking food, ensuring that an internal temperature 75 °C is reached.
- Wash and sanitise vegetables and fruits.
- Using suitable processing methods such as Pasteurization or Ultra-Heat Treatment UHT.



Always store chemicals in a locked separate cupboard.



Never place chemicals into unmarked bottles



Food should not be left within the can once the can has been opened. The metal in the can may be leached in to the food, decant the contents of the can in to a separate covered container.

Chemical contamination

Chemical poisoning may occur as a result of food contamination with high concentrations of chemicals cause of chemical poisoning and chronic diseases in long term such as some cancers and blood diseases.

As a result of changes in eating habits, large scale food production and new methods to increased shelf life, all of this has lead to increase chemicals used in the production and food industries such as flavors, colors, preservatives and increase the chemicals used as agents in cleaning and disinfecting and pest control such as detergents and pesticides.

All of this lead to increase rates of chemicals contamination, taking into account the impossibility of removing all sources of chemical contamination.

Chemicals storage

Keep cleaning chemical stocks as low as possible to avoid storage problems.

Always store chemicals away from food, equipment or ingredient stores. In a locked separate cupboard is ideal.

Never place chemicals into unmarked bottles.

Chemicals handling

Handling chemicals carefully. Do not use old chemicals containers for food, and do not use old food containers for chemicals, particularly for detergents.

Do not reuse old water bottles with acidic juices such as orange and lemon juices, water bottles are made for use with water only.

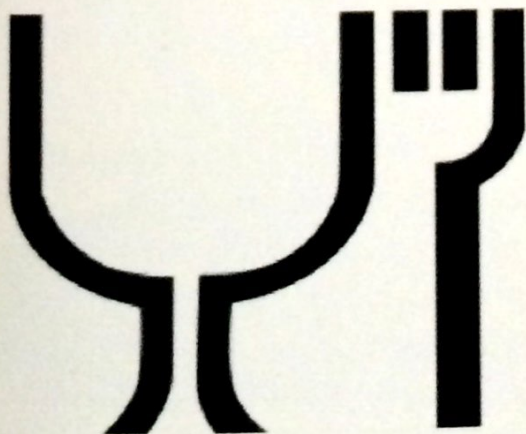
Do not wrapped food by newspaper.



Do not use old food containers for chemicals. Do not use old chemicals containers for food.



Do not use badly scratched Aluminum cookware to cook or store food.



Use food grade containers only.

Do not cook or store food for long periods of time in aluminum or copper cookware .

Do not use colored plastic bags or rubbish plastic containers or non food grade plastic containers for store food. Use only food grade containers with food grade mark.

Pest control chemicals

Never let pest control bait/chemicals, including sprays, in food premises come into contact with food, packaging, equipment or surfaces.

Protect unwrapped food by covering it or keeping it in suitable display equipment.

All food contaminated with insecticides in any way, should be discarded immediately.

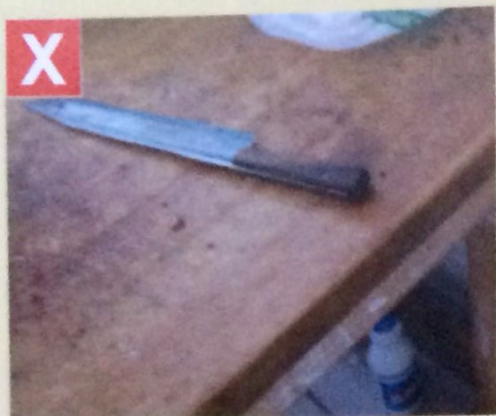
Properly wash and rinse all food contact surfaces after pest control operation and before reuse with food.

Only trained pest control professionals should apply pesticides in facility and preferably only when the building is closed.

Manufacturer's instructions

Ensure that use a cleaning chemical safely and always follow the manufacturer's instructions, which describes how to use and safe concentrations and time of contact, always keep the material safety data sheet with the installation and use.

All chemicals used must be designed for use in food premises.



Wooden equipment, utensils and surfaces that contain wood, can cause physical and microbial contamination of food.



Jewellery can cause physical and microbial contamination of food.



Badly maintained premises can contaminate food via flakes of paint plaster and broken tiles.

Physical contamination

Physical contaminations are the most commonly reported consumer complaints because the injury occurs immediately or soon after consumption, and the source of the hazard is often easy to identify. In some cases the physical contaminants carry chemical and/or biological contaminants.

Food handlers

Contamination from food handlers includes items may fall into food from clothing (buttons and pins), items from pockets (coins and pens), hair, fingernails, jewellery and wound plasters. To prevent physical contamination from food handlers: All food handlers must wear the appropriate protective clothing, tie back long hair and use a hairnet, wear a hat, no jewelers to be worn and use blue plasters so they can be spotted if they fall into food.

Raw ingredients

Unwanted parts of raw ingredients can remain in food after preparation, including: egg shell, bones, pips, stalks, soil and grit. To prevent physical contamination from raw ingredients: Wash all fruits and vegetables before preparation and careful preparation of ingredients to remove physical hazards.

Premises

Badly maintained or unclean premises can contaminate food via: dirt, waste, flakes of paint plaster, brick, broken glass and broken tiles. To prevent physical contamination from the premises: Maintain high hygiene levels (ensure regular deep cleaning), ensure follow the 'clean as you go' policy, so that waste never builds up, Keep the premises well maintained and ensure that repairs are carried out immediately.



Food should not be stored in glass containers and all light fittings in food preparation rooms should be fitted with diffusers



Remove packaging away from the food preparation and storage areas.



Damaged equipment or machinery can cause physical contamination of food.

Packaging materials

Most food items are delivered in some kind of packaging or container. If the packaging is damaged, or not fully removed it may become a source of physical contamination, examples include: string, polythene, paper, cardboard, plastic, and glass. To prevent physical contamination from packaging materials: Remove packaging away from the food preparation area (dispose of packaging immediately).

Equipment and machinery

Damaged equipment or machinery can cause physical contamination of food with pieces of: glass, metal, wood, plastic, screws, nuts and bolts. To prevent physical contamination from equipment and machinery: Clean all equipment on a regular basis and make frequent maintenance checks.

Cleaning equipment must be kept in good condition to avoid the harbourage of dirt and bacteria and prevent parts of the equipment being shed and contaminating the premises. (Replace the bad condition equipment and do not use aluminum wires.)

Food Pests

Not only can food pests spread disease, they can also cause physical contamination of food from: dead insect bodies, larvae or eggs, droppings, fur or feathers. To prevent physical contamination from food pests: Keep premises clean and tidy (check and clean storage areas regularly) Proof the building to prevent food pests from getting in, Store all foods off the floor in rodent proof containers with lids, and store refuse and food waste outside in covered bins and empty bins regularly.



You must not wear jewellery or watches while preparing food as they can:

- Carry bacteria
- Fall off into the food



Protective clothing and equipment includes: overalls, aprons, protective coats, hair nets/hats, beard snoods, shoes and disposable food handling gloves.

The importance of personal hygiene

Even healthy people carry food poisoning bacteria on their bodies.

Bacteria may be introduced into food directly from the food handlers when handling food via hands, skin, clothing, hair, jewellery and watches, by smoking, by coughing and sneezing, boils, cuts and spots.

Anyone involved in running a food business should have a high standard of personal hygiene which will be reflected in appearance, dress, behaviour and personal cleanliness. High standards of personal hygiene will reduce the risk of contamination and help to prevent food poisoning.

Start at home

Maintaining a clean body (daily shower). Keep nails clean and short. Do not wear strong perfume. Must not travel to and from work in protective clothing.

Reporting illnesses

Skin infections are not the only illnesses that you have to report your supervisor. You must tell your supervisor if you have food poisoning or any other illness with similar symptoms.

You may need a doctor to say you can go to work.

Before start work

- Remove your outdoor clothes, jewellery and watch.
- Wear clean protective clothing such as an apron or overall. Keep hair clean and covered under a cap or hairnet. Long hair must be tied up.
- Wash your hands.



The uniform must be clean made from washable materials, with light colored and minimum pockets, in good condition and cover most outer garments.

Protective clothing (Work uniform)

The uniform and protective clothing that you wear in the food operation areas are designed to protect food from your body. Your body and clothing should not contaminate food or a food contact surface.

The uniform and protective clothing are depending on the type of work you do.

Protective clothing and equipment includes: overalls, aprons, protective coats, hair nets/hats, beard snoods, shoes and disposable food handling gloves.

Remember

- Store personal belongings and clothing in a locker or changing room.
- Wear a clean, well-fitted uniform and shoes to protect the food.
- Take off your protective clothing when you go to the toilet or outside the food preparation area.
- Do not change your clothes inside toilets.

Hand washing: Why?

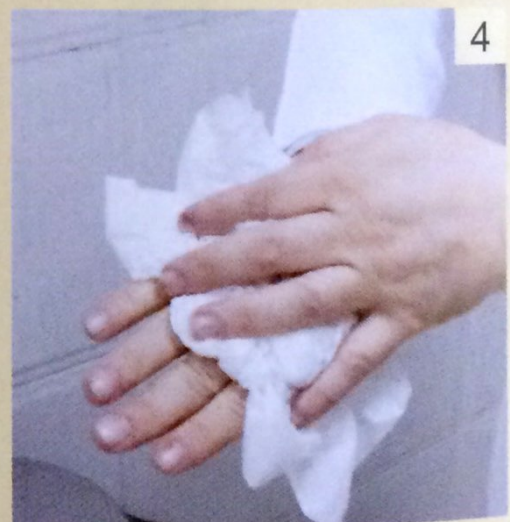
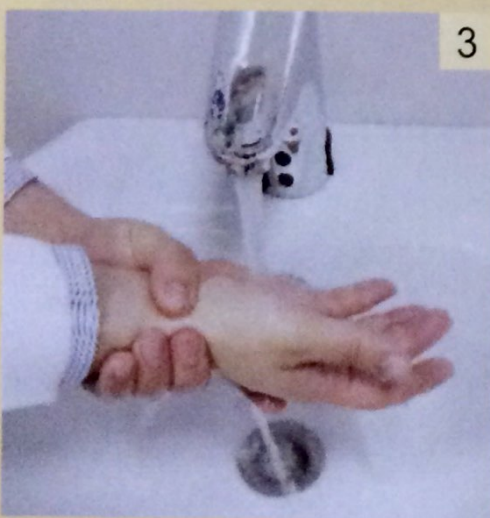
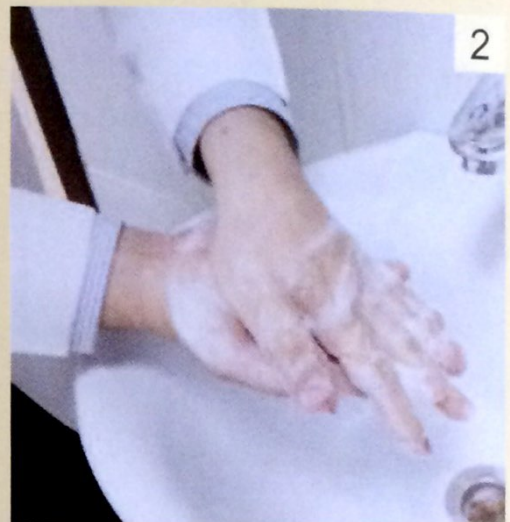
Washing your hands thoroughly is a good way to reduce the chance of contaminating food with bacteria.

To allow you to wash your hands properly. Your establishment should provide:

- Designed hand-wash basins
- Cold and hot water
- Liquid soap
- Paper towels.

Hand washing: How?

1. Wet hands with warm water and apply soap.
2. Rub hands together to make a lather for 10-20 seconds.
3. Rinse hands with water.
4. Dry hands using paper towel.





Cuts, spots and sores provide an ideal place for bacterial multiplication. To prevent contamination of food by harmful bacteria and blood these lesions should be completely covered by waterproof dressings, preferably colored blue. Cuts on fingers may need the extra protection of waterproof fingerstalls.



If you need to sneeze or cough, make sure that you move away from food and cover your mouth, then wash your hands.

Hand washing: When?

You must wash your hands regularly and particularly:

- **Before** you start work, handle cooked or ready-to-eat food and use disposable gloves.
- **After** handle raw food, going to the toilet, handle rubbish, smoking, touch your hair or face, sneeze, cough, and after routine cleaning tasks.

Sneezing and spitting

When we spit, sneeze or cough, we can contaminate food with saliva. Do not spit while you are in food areas.

If you need to sneeze or cough, make sure that you move away from food and cover your mouth, then wash your hands.

What if you can't move away quickly? Should you sneeze into your arm and change your outer garments? If you sneeze and cough, you should never use your uniform as a paper towel.

Food-handling gloves

Disposable food-handling gloves are a great tool to help you handle food safely. But dirty or damaged gloves can be worse than dirty hands and can contaminate food.

Do change your gloves frequently (such as every half hour) and after handling garbage, after every break and between handling raw and cooked foods.

Do not use gloves for anything other than handling food, like handling money, cleaning, handling packaging.



Do not use hand wash basin for wash equipment or food.



Dirty or damage gloves can be worse than dirty hands and can contaminate food.

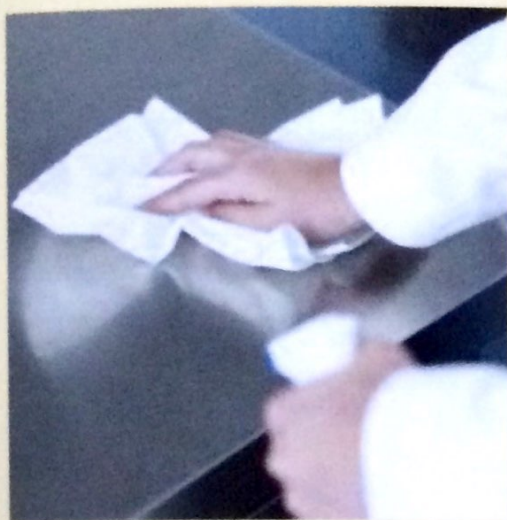
Smoking

Smoking is forbidden in any food area (receiving, storing, preparing). Ash, cigarette butts and smoke can all contaminate food, and smoking can also cause coughing which can contaminate food.

When you smoking the harmful bacteria are passed from your mouth, to your hands and onto the food.

Bad habits

- Use of the food wash basin or equipment wash basin for wash hands.
- Use the hand wash basin for wash equipment or food.
- Wet the fingers to open the bags.
- Scratching the head or pimples.
- Tasting food using finger or unwashed spoon.
- Handling of pottery and glass from the internal parts.



Good cleaning and disinfection:

- Reduce food poisoning
- Attractive work environment
- Favorable image to the customer
- Remove food and harborage for pests
- Protects structures
- Increased profits
- Less chance of prosecution

Cleaning and disinfection in food premises

Cleaning is the process of physical removal of food debris, visible dirt and food particles from surfaces, equipment and fittings using hot water and detergent. Cleaning on its own will not remove all bacteria.

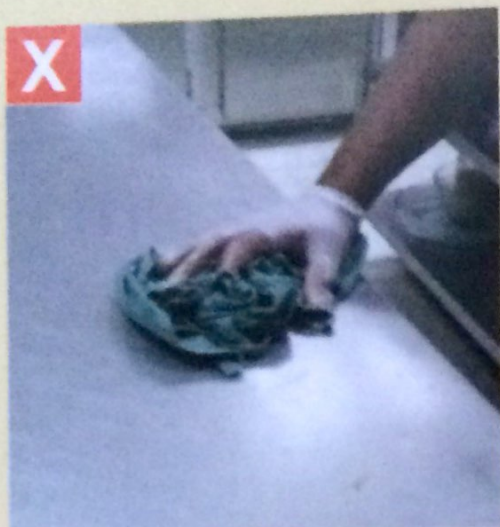
Disinfection is the process of killing bacteria and viruses following general cleaning.

Cleaning and disinfection in food premises are vitally important because:

- To reduce food poisoning – proper cleaning and disinfection will facilitate the removal of harmful bacteria from surfaces and equipment and will help to reduce the risk of cross contamination
- To remove physical materials which may contaminate food or attract pests.

Cleaning agents

- Detergents are used to remove dirt and dissolve grease, but detergent do not kill bacteria.
- Disinfectants are used to reduces microorganisms to a safe level (or very hot water at 82 °C).
- Perfumed disinfectants are used use in toilets.
- Sanitizers are used to clean and disinfect at same time.



Must not use cloth for wiping food contact surfaces.

Cleaning and disinfection method

Basic steps for any cleaning and disinfection to be effective:

1. Pre-clean

Remove food scraps, dirt and grease by soaking, scraping or sweeping.

2. Main-clean

Wash and scarp with hot water and detergents.

3. Rinse

Rinse with hot water.

4. Disinfect

Use a chemical disinfectant. (or very hot water or steam).

5. Final Rinse

Rinse with clean water (this step can be excluded in case of the type of disinfection method not required to rise after used as very hot water or some chemicals designed to use without rinsing).

6. Dry

Allow to dry in the air or use disposable paper towel.

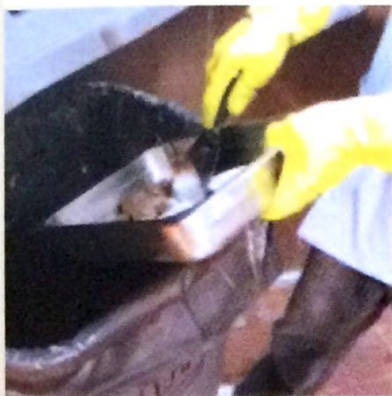
Clean as you go

It means to clean things as soon as possible - particularly when working in preparation or cooking areas – so that you do not have a large amount of cleaning to do when the task is completed.

It also means Keep your work area clean at all the times.

Three compartment sink method

1- Pre-clean



Loose or remove food scraps, dirt and grease by rinse, scrape, or soak all items before wash them in a three-compartment sinks.

2- Main-clean



Remove surface dirt, grain, food debris and grease by wash items in the first sink with hot water 43 °C and detergent.

Use a brush or scrubber to remove soil.

3-Rinse



To remove loosened soil and residues of detergent. Immerse or spray rinse items in the second sink with hot water (43 °C).

4- Disinfect



Immerse items in the third sink in very hot water (75 °C for 30 seconds or 82 °C for 10 seconds) or disinfectant solution (follow the manufacturer's label directions).

5-Dry



Leave items to dry naturally in the air (or use disposable paper towel).

Store on clean, dry and disinfected surface.



Chemicals must never be put into unmarked containers or old food containers.



Cleaning equipment must be in good condition.



Change water frequently, as soon as it begins to look dirty.

Remember

- Utensils, multi-service articles, equipment and food contact surfaces must be cleaned and disinfected after each use.
- Floors, walls, ceilings, equipment and washroom fixtures, garbage containers and garbage areas must be cleaned and disinfected on a regular basis.
- Read and follow the manufacturer's label directions concerning the recommended disinfectant concentration, contact time and method of application. Wear Protective clothing and gloves where necessary.
- Food must not be exposed to the risk of contamination during cleaning or from chemical storage.
- After use, clean, disinfect and dry the cleaning equipment after use.
- Clean from a clean area towards a dirty area.
- Clean from the top down.
- Make up a fresh batch of cleaning agent or disinfectant for each job.
- Wash your hands after touching cleaning equipment.
- Never use the same cleaning implements for food rooms and sanitary accommodation.

Cleaning schedule				
What	Where	When	How	Who

Cleaning schedule is a written plan for cleaning and disinfection in food premises.

Cleaning schedules

A cleaning schedule is an easy and effective way of demonstrating all equipment and areas are regularly cleaned. It is a set of instructions that describe everything that needs to be done in order to maintain the premises in a clean and sanitary condition.

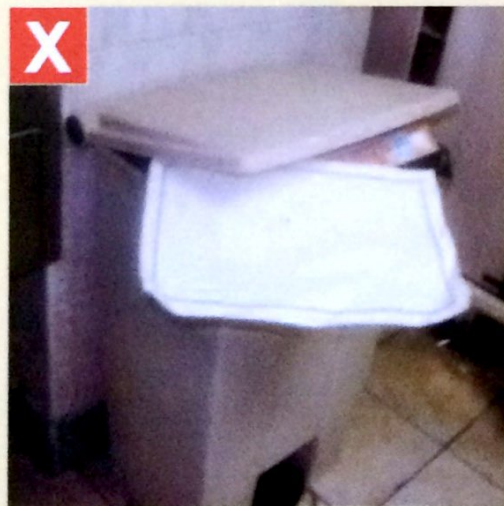
Some areas and equipment required cleaning intervals more other areas and equipment, as floor required daily cleaning and the ceiling required monthly cleaning.

Manager or supervisor is responsible for developed a written cleaning schedule, that describe the method and time for all equipment and areas cleaning, and who is carry out the cleaning.

As a food handler you have to strictly follow cleaning schedule.



All waste must be stored in bins/containers that are pest proof, provided with an internal plastic bag, foot operated and provided with tight fitting lids to prevent the entry of flies.



Food waste and refuse must not accumulate in food areas.

Waste control

Waste control is important because the storage and disposal of waste needs to be controlled carefully since waste presents a risk of physical contamination to food and may attract pests.

To ensure good waste control take into account the following:

- All waste must be stored in bins/containers that are pest proof, provided with an internal plastic bag, foot operated and provided with tight fitting lids to prevent the entry of flies.
- The containers must be kept in a good state of repair and kept clean. In order to ensure that harmful organisms are not able to grow and pest are not attracted to the premises
- Food waste and refuse must not accumulate in food areas.
- Sufficient numbers of refuse containers should be provided to readily accommodate the quantity of waste ordinarily produced within the premises.
- Adequate provision must be made for the removal of food waste and refuse.
- Refuse areas must be clean and in a good state of repair. This area should be located as far away from food preparation areas.

Drainage system

Drainage systems must have sufficient fall to allow all solid and liquid waste to flow away. The direction of flow should be away from clean areas to dirty areas.

To ensure that pests do not gain access and prevent any seepage of waste water to the premises all exposed drainage intersections and inspection chambers should be fitted with tight fitting covers.



Rats and mice inside buildings can be detected most often by droppings and gnawing marks on food, packaging, plastic, wood and even electrical cables.



Cockroaches are proven or suspected carriers of the organisms causing diarrhea, dysentery, and typhoid fever.

The importance of pest control

Pest control is important because

- Pests can carry harmful bacteria that can contaminate foods and cause illness. These harmful bacteria can be passed to the food by contact with their hair, faeces and urine.
- Pests can also cause serious damage to the structure and fabric of food premises.

The most common food pests

- Rats and mice
- Cockroaches
- Flies
- Insects in stored foods
- Birds

Rats and mice

Rats and mice are rodents which are significant pests in both the food industry and in domestic premises. They are carriers of pathogens and will readily feed on food intended for human consumption.

Cockroaches

Cockroaches carry a variety of pathogens and easily contaminate food with their faeces and dead bodies. They are nocturnal insects and are not normally seen, so that their presence may initially be unnoticed, but can be detected by their smell, faecal pellets and dead bodies.



Flies regurgitating partly digested food from a previous meal on to the food on which they are currently feeding.



General control of insects in stored foods involves making sure foods are rotated and used within their shelf-life.

Flies

Flies carry pathogens and contaminate foods by landing on food and food surfaces and transferring bacteria from their legs and body; by continually defecating and by their mode of feeding which involves regurgitating partly digested food from a previous meal on to the food on which they are currently feeding. Their eggs and dead bodies may also end up in food.

Birds

Wild birds, including pigeons and sparrows, have been found to carry pathogens as Salmonella. They are more significant as a pest in certain types of food premises, such as food storage warehouses, food factories and bakeries where they gain entry, for example, through loading bay areas or damaged roofing.

Insects in stored foods

Various insects are sometimes found in dry products such as flour, cereals, nuts and spices. They include types of beetles, weevils, psocids (book lice), mites, moths and their larvae. Although most of these insects do not necessarily carry pathogens, they obviously make the food undesirable to eat and are a nuisance.



Keeping premises clean and tidy is most effective method to control food pests in food areas.

Simple rules for pest control

- Keep premises clean
- Keep refuse area tidy
- Clean up spillages immediately
- Keep food off floor
- Cover food
- Report sightings

Pest control method

1. Preventing access

Buildings should be kept in good repair and condition to prevent pest access and to eliminate potential breeding sites. Holes, drains and other places where pests are likely to gain access should be kept sealed. Wire mesh screens, for example on open windows, doors and ventilators, will reduce the problem of pest entry.

2. Harbourage and infestation

The availability of food and water encourages pest harbourage and infestation. Potential food sources should be stored in pest-proof containers and/or stacked above the ground and away from walls. Areas both inside and outside food premises should be kept clean. Where appropriate, refuse should be stored in covered, pest-proof containers.

3. Monitoring and detection

Establishments and surrounding areas should be regularly examined for evidence of infestation.

4. Eradication

Pest infestations should be dealt with immediately and without adversely affecting food safety or suitability. Treatment with chemical, physical or biological agents should be carried out without posing a threat to the safety or suitability of food.



Adequate space for food preparation is essential to effective and hygienic food preparation having regard to the number of customers to be served. Too small a kitchen or food room may cause congestion and insanitary food operation that increases the risk of food contamination.

Food premises

Food premises should be designed and constructed in such a way that they:

- Are appropriate to the activities they are used for.
- Provide adequate spaces for food production and other ancillary facilities and equipment.
- Minimize the likelihood of food contamination.
- Facilitate easy cleaning, sanitizing and maintenance.
- Prevent pest infestation.
- Keep out dust, dirt, fumes, smoke or other contaminants.
- Provide a safe environment for workers and customers.

The layout of food premises should be designed in such a manner that:

- Food flow is in one direction as far as possible (i.e. receiving → storage → preparation → cooking / display or serving).
- Adequate spaces are provided for food preparation, food storage, scullery, storage of equipment / utensils.
- Incompatible areas (such as cloakrooms or toilets) are completely segregated from food rooms.



The design, construction and equipping of food premises must minimize the risks from food hazards.

Construction

Floors

Must be made of non-absorbent, water-proof materials, that are also easy to clean and wash, and of materials that are not affected by cleaning products. The floors must be free from cracks or holes, and with a slight slop towards the drainage exits. The floors must be made of rough ceramic tiles (durable against friction and erosion), or from steel covered by one of highly durable insulating materials.

Walls

Are to be painted by a light-colored oil paint, or its equivalent in quality and appearance. A light colored ceramic must cover the walls to the ceiling in areas of preparation, cooking, washing, receiving and where steam rises. Corners between walls, floors and ceilings must not be sharp, and preferably have a round edge or a 45 degree angle for ease in cleaning and disinfecting and to avoid the accumulation of contaminants.

Ceilings

Are to be painted with a light-colored oil smooth paint that is easy to clean, that doesn't allow accumulation of contaminants, dirt, steam condensation, and growth of bacteria or molds. An artificial hanging or wooden ceilings are strictly forbidden in the areas of cooking, preparation, washing and storing.

Doors

Must be made of aluminum and glass, so as not to let in water and nonabsorbent, with a smooth surface that is easy to clean, and are firmly closed automatically.



Lighting fixtures in food preparation areas should be protected with shatter-proof covers to prevent broken glass from falling onto the food, food utensils or food equipment in the event of a breakage.



Cooking range inside kitchens and food rooms should be equipped with an exhaust system that can efficiently and effectively remove all fumes, smoke, steam or any vapour arising from food operations.

Windows

Are to be made of aluminum and glass or any other non-rusting metal, and must be fitted with a screen with small holes to avoid the entrance of insects and rodents, and be easy to clean.

Ventilation

Food areas must be well-ventilated to avoid the rise in ambient temperature, and ensure that steam is not congested or dust accumulated. Fans /AC have to be installed in a number and design that suits the area of the place and amount of steam in it.

Lighting

Adequate natural and / or artificial lighting should be provided in food premises to ensure safe production of food and facilitate cleaning of premises.

All lighting and light fixtures should be designed to avoid accumulation of dirt and be easily cleaned.



Food contact surfaces should not introduce into food any substance which may be harmful to the health of consumers.



Regularly calibrate all food thermometers and every time it is dropped.

Equipment

Equipment and containers coming into contact with food, should be designed and constructed to ensure that, where necessary, they can be adequately cleaned, disinfected and maintained to avoid the contamination of food.

Equipment and containers should be made of materials with no toxic effect in intended use. Where necessary, equipment should be durable and movable or capable of being disassembled to allow for maintenance, cleaning, disinfection, monitoring and to facilitate inspection for pests.

Food thermometers

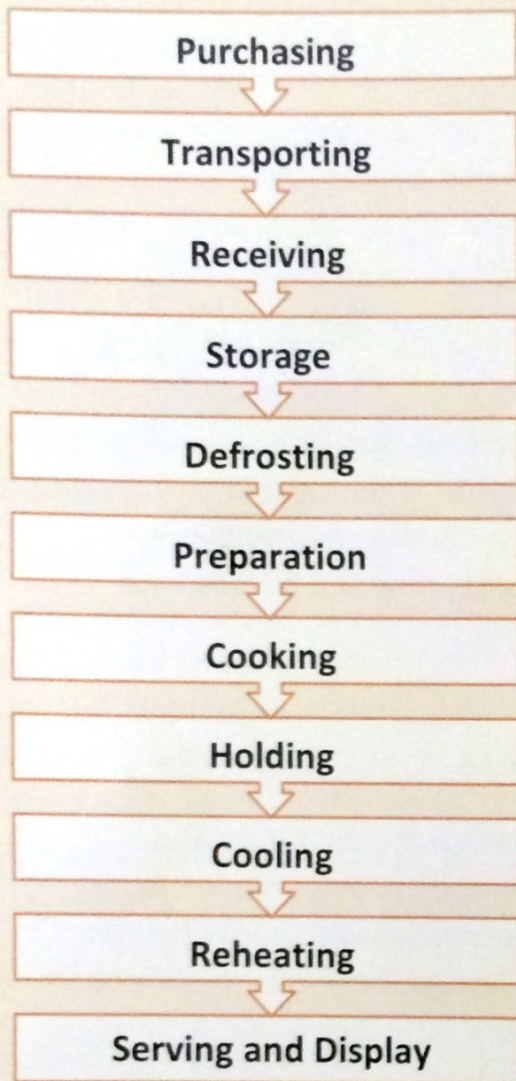
Food thermometers and other food control and monitoring equipment must be provided in all food establishments. Probe thermometers should be clean and sanitize before use. (Antiseptic wipes, disinfection solution / hot water 82 °C).

Ice-point method

Fill a large container with crushed ice. Add clean tap water until the container is full. Put the thermometer probe into the ice water so the sensing area is completely submerged. Wait 30 seconds or until the indicator stops moving. Ideally reading 0 °C.

Boiling-point method

Boil clean tap water in a deep pot. Put the thermometer stem or probe into the boiling water so the sensing area is completely submerged. Wait 30 seconds or until the indicator stops moving. Ideally reading 100 °C.



A flow of the process steps in most food business such as restaurants, from purchase of food through to 'service to customers.

Operations and HACCP system

HACCP system (hazard analysis and critical control points) is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product. HACCP is designed for use in all segments of the food industry. In this section we study food preparation steps, starting from purchase of raw materials until serving or sale of food.

Purchasing

- Select more safe raw materials.
- Purchase all materials from reputed suppliers only.

Transporting

- Chilled food below 5 °C. Frozen foods below -18 °C).
- Make sure that there is no risk of contamination of other foods.
- Make sure that delivery vehicle is clean.
- Drivers must have good personal hygiene.



Receiving table to prevent contamination from the floor during checking operations.



A well organized dry goods storage area will facilitate good stock rotation reduce the likelihood of pest infestation and facilitate cleaning.

Receiving

- Delivery vehicle is clean.
- There is no evidence of pests.
- Food delivered at the correct temperature.
- Food quality - appearance.
- Food is within its appropriate expiry date.

Dry storage

- Keep dry store clean, dry, free from pests, lit well enough and well ventilated.
- Products must be stored off the floor (25-30cm) and away from walls (15cm), on racking or mobile units and in sealed containers.
- Keep chemicals away from food stores.
- Dry store temperature below 25 °C.
- Properly stock rotation (check expiry date and the use of older products).
- Separate and identify spoiled, rejected or out of date food to prevent accidental use.



Chilled food in refrigerator stored at (0 to 4 °C).



Frozen food stored in freezer at F(-18 to -22 °C).

Cold and frozen storage

- Chilled food at (0 to 4 °C). and frozen food stored at (-18 to -22 °C).
- Keep raw and cooked/ready to-eat foods separate (raw food shall be stored on lower shelves).
- Keep food in food grade containers.
- Properly stock rotation (check expiry date and the use of older products).

Storage rules

- Decanted food from their original packaging the 'Use By' or 'Best Before' date should be transferred to the receiving container or wrapping to ensure that out of date food is not used. The FIFO (first in first out) system should be applied to stock rotation.
- Goods must be stored in accordance with manufacturer's recommendations to ensure their safety and quality.
- Don't use any food or drink after the end of the 'use by' date on the label, even if it looks and smells fine. The 'best before' dates are more about quality than safety. When the date runs out it doesn't mean that the food will be harmful, but it might begin to lose its flavor and texture.

Food Storage Chart

Item	Temperature	Remarks
Raw meat and poultry	-1 : 1 °C	Hanging when possible
Eggs	1: 4 °C	With proper stock rotation
Cooked food	1: 4 °C	With proper stock rotation
Ice-cream	-18 °C	For long storage
	-12 °C	For display
Butter	-18 °C	Long storage
	1: 4 °C	Display and operations
Milk and cream (cream substitutes)	Less than 5 °C	Proper stock rotation
Flour, cereals and canned food	Less than 25 °C	
Vegetables and fruits	1: 4 °C	
Dry vegetables and dry fruits	Less than 25 °C	Potatoes and onions



Avoid fast melting by hot water or at room temperature.



Separate between the equipment used for raw food and those used for ready to eat by a color code system.

Defrosting

- Frozen foods must be defrosted in a cool place, cold rooms (refrigerators).
- Temperature of frozen foods that are defrosted is $+1^{\circ}\text{C}$ inside, when they become ready for cooking.
- Foods while defrosting must be kept in a food-grade container equipped with systems to separate (grids)/drain defrost liquor.

Microwave Defrosting

- Remove food from its packaging before defrosting.
- Select the "defrost" setting. During microwave defrosting, rotate and turn food upside down where possible several times during defrosting.
- Cook food immediately after defrosting because some areas of the frozen food may begin to cook during the defrosting time.

Preparations

- Keep raw food apart from the ready-to-eat foods
- Use good personal hygiene practices.
- Make sure that equipment and utensils are clean
- Minimize the time food is in danger zone temperature.



Wash all fruits and vegetables even if the rind or skin is not eaten. Fruits and vegetables should be washed just before they are eaten or prepared to prevent mold and bacterial growth during storage.



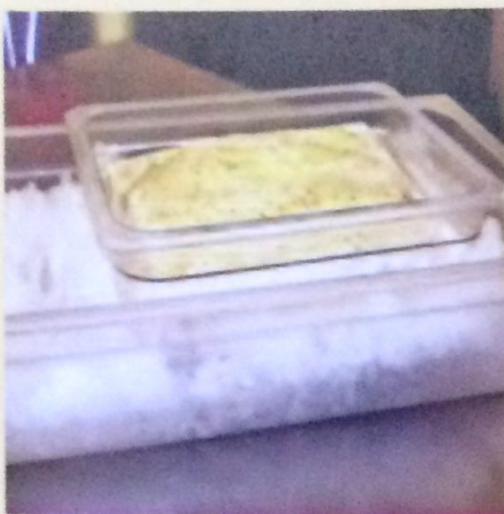
Clean and disinfected the thermometer before you insert it into food and use calibrated thermometer.

Salad and vegetables preparations

- All vegetables especially those for salads and cold dishes must be thoroughly washed and disinfected to remove dirt and dust/chemical residues/insects and other foreign bodies.
- Use good personal hygiene practices.
- Minimize the time food is in danger zone temperature (Preparation time should not be more than half an hour).
- Use only sinks for food.
- Never taste a fresh fruit or vegetable without washing it first.
- Don't use soap or detergent.

Cooking

- Cook food to an internal temperature not less than 75 °C.
- Make sure that equipment and utensils are clean
- Use clean and disinfected spoon to taste the food for one time.



Place liquid foods such as stews and casseroles in shallow containers no more than 5 cm deep.



Do not use hot holding equipment like Bane Mare for reheat food (hot holding equipment designed to maintained food temperature at 65 °C only).

Cooling

- Cool hot food which has just been cooked as quickly as possible. Cooling time not more than an hour and a half or use Blast Chiller, and then placed in the refrigeration unit.
- Keep raw and cooked/ready to-eat foods separate.
- Make sure that food is protected and/or covered.
- Portion food before cooling for example, slice meats and cut large poultry into smaller portions.
- Place food in the refrigerator as soon as it stops steaming.

Reheating

- Re-heat to minimum 82 °C.
- Boil liquids.
- Reduce the amount of food re-heated.
- Reheating food for a once.
- Protecting from risk of contamination.



Food for hot serving must be kept at 64 °C or above.

Hot service/ Display

- Food for hot serving must be kept at 64 °C or above. Hot food removed from display after 2 hours should be discarded.
- Monitor food temperatures.
- Use good personal hygiene practices.
- Make sure that food is protected and/or covered.

Cold service/ Display

- Food for cold serving must be kept at 8 °C or below and should not be kept within cold display units for more than 4 hours.
- Monitor food temperatures.
- Use good personal hygiene practices.
- Make sure that food is protected and/or covered.



Food for cold serving must be kept at 8 °C or below .



Health and safety in the workplace keeping people healthy and safe at work.



Poor health and safety standards can cause lost of equipment and facilities.

Introduction to health and safety in the workplace

Health and safety in the workplace is defined as the Knowledge concerned with maintaining the safety and human health, by providing work environments free from the causes of accidents, injuries or occupational diseases.

In other words, is a set of procedures, rules and systems in the legislative framework aimed at maintaining the human risk of infection and maintain the risk of property damage and loss.

Health and safety in all areas of life, when we deal with electricity or electrical appliances we followers of the safety rules, and when driving cars or even walk the streets, we need to follow the rules and principles of safety and within the workplaces, we need to safety rules.

General objectives for health and safety in the workplace

1. Protection of the human from the risk of injuries resulting from the work environment by preventing exposure to accidents and injuries and occupational diseases.
2. Maintaining the basics of the physical component of the facilities and content of the equipment from damage and loss as a result of accidents.

Sources of hazards in food establishments

1. Workers and employees

As a result of not thinking (use improper equipment), ignorance (lack of experience), hurrying (use shortcuts), neglect (lack of focus), work under pressure, disturbance from colleagues, play and joking, poor health status, tiredness and fatigue.

2. Equipment

As a result of bad machine design, and not obscure the moving parts.

3. Materials

As a result of improper storage of materials, and poor quality of raw materials.

4. Work Environments

As a result of poor working conditions (lighting, noise and ventilation).

Effect of hazards in food establishments

1. Accidents (injuries, burns, deformities, disabilities and may lead to death).
2. Diseases (Respiratory diseases resulting from excessive exposure to vapors or chemicals, and food-borne diseases).
3. Damage and loss of equipment, machinery and foodstuffs.

Employer responsibilities

- Look after employees health, safety and welfare
- Provide a healthy and safe workplace
- Provide a healthy and safe way to do jobs
- Provide information, instruction and training
- Assess risks and control them

Workers and employees responsibilities

- Not put themselves or others at risk
- Report hazards/unsafe conditions
- Co-operate with their employers

Hazards in food premises

The most common hazards in food premises are:

- High temperatures causing burns.
- Machinery and sharp equipment causing cuts.
- Slips and falls.
- Manual handling .
- Electricity.
- Hazardous substances.
- Fire.



Scalds from hot oil are generally more severe than those from water. This is because oil heats to higher temperatures, and oil is thicker so it may remain on the skin for a longer period of time.

High temperatures causing burns

Most scalds and burns are caused by spillages of hot liquid or contact with hot surface.

- Spilling and splashing of hot fats, oils, and food products.
- Contact with steam.
- Contact with hot surfaces such as stove tops, ovens, grills, pots, pans, and trays.

To reduce risk of burns

- Turn off stoves when they are not in use.
- Avoid lifting and carrying heavy or awkward containers or get two people to team lift where possible.
- Oil and fat should be allowed to cool before moving.
- Appliances should be cool before starting to clean.
- Use oven mitts and gloves and wear covered in shoes.
- Keep pot handles away from hot burners.

First aid for minor burns

1. Cool the burn. Hold the burned area under cool running water (not ice) for at least five minutes, or until the pain subsides.
2. Cover the burn with a dry sterile bandage.



To avoid burns when using the microwave

- Use pot mitts to remove hot items.
- Never place metal or aluminum containers in the microwave.
- Microwaves should not be operated when they are empty.



To avoid burns when pour liquids

- Use a strainer or colander placed in the sink.
- Never use a lid to drain liquids from pots – the weight of the food and liquid may cause the lid to slip, increasing the chance to be burned from the food, water or steam.



To avoid burns from over-boiling

- Turn off burner.
- Grab handle with pot holder.
- Slowly slide off the burner or grill to an unused and unheated portion of the stove.



To avoid burns from steam

- Open steam, hot water and hot liquid faucet slowly to avoid splashes.
- Open lids away from you to allow steam to escape.



Cuts result primarily from:

- Peeling, dicing, mincing, or slicing with knives, food slicers, meat grinders.
- Broken dishes, cups, and glasses.
- Contact with moving parts in machines.



Use food pushers to advance food in machines

Machinery and sharp objects causing cuts

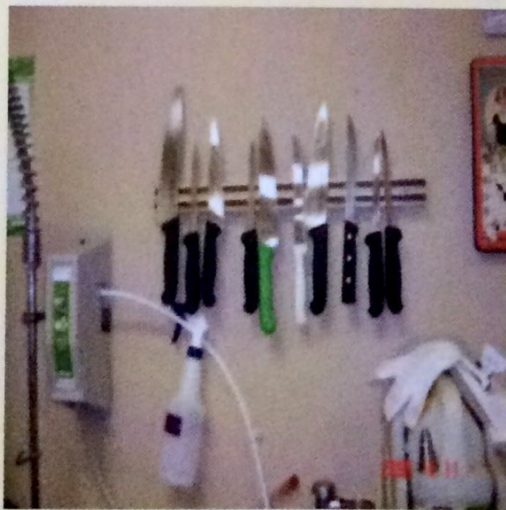
Food handlers can involve sharp instruments that can be hazardous. Injuries range from minor cuts to loss of fingers.

Reduce the risk of cuts injuries

- Wear cut-resistant gloves when using sharp instruments.
- Use the right knife for the job, and make sure it is sharp.
- Always cut away from your body.
- Keep knives sharp.
- Wash knives separately.
- Store knives in sheaths or racks.
- Use can opener only to open cans, and remove top of can before use the can contents.
- Use food pushers to advance food in machines
- Never put your fingers near moving parts or blades
- Unplug equipment before doing cleanup, maintenance, or repairs.
- Follow manufacturers instructions for equipment and machines.



Use can opener only to open cans, and remove top of can before use the can contents.



Store knives in sheaths or racks.

First aid for minor cuts

1. Clean the cut

Rinse the cut with cool water.

2. Stop the bleeding

To stop the bleeding, gently apply firm, direct pressure using a clean cloth or gauze and apply a bandage.

If the cut spurts blood or if it doesn't stop bleeding, get medical help right away.



Accidents occur as a result of slipping and tripping may result in:

- Minor injuries (bruises, contusions).
- Broken bones.
- Injuries in the back.
- Stopped working.
- Serious injuries (in head, paralysis).

Slips and trips

Slips and trips injuries comprise 35% of 'major' injuries in the food and drink industries. Slips injuries are more prevalent in the food and drink industries than in most other industries.

Main causes of slip and trip injuries

- Most slips occur when the floor is wet with water or contaminated with food product.
- Most trips are caused by obstructions, the remainder by uneven surfaces.

Reduce the risk of slips and trips injuries

- Clean up spilled water, drinks, ice cubes, food, silver ware from the floor immediately and do not wait.
- Place caution signs to alert others.
- Wear slip resistant shoe wear.
- Be aware of uneven floor surfaces.
- Make sure lighting is adequate in all areas.
- Use mats in wet areas.



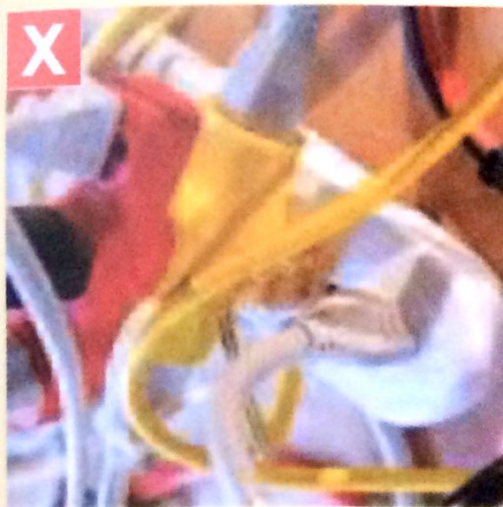
Plan workflows and storage to make sure that goods and equipment do not cause obstructions. Keep floors and traffic routes free from obstructions.

To avoid the risks in storage areas

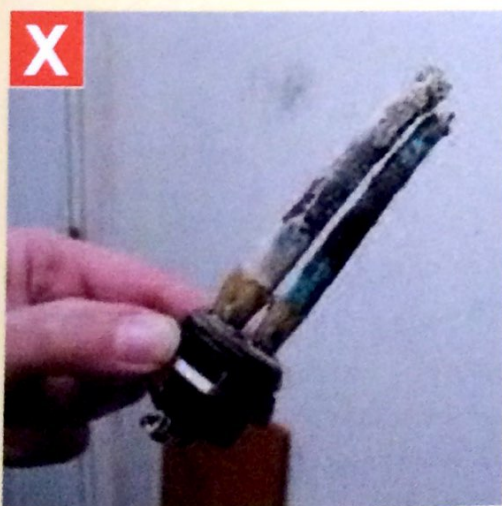
- Ensure items stored above ground level (e.g. on storage shelving) are stable and will not fall easily if disturbed.
- Give careful consideration to methods of stacking, handling and movement of goods to prevent articles falling.
- Store heavier items on or near the ground and lighter items higher up.

First Aid for slipping or tripping accidents

- Keep the person still – do not move them unless there is an immediate danger.
- Call the medical assistance immediately.



Do not overload circuits. Too many items plugged into one outlet – octopus.



Not using appliances with damaged plugs or exposed wires.

Electrical Accidents

Contact with electricity considered one of the biggest risks in the workplace and workers' exposure to the following risks:

- Electric shock.
- Electrical burns.
- Death.

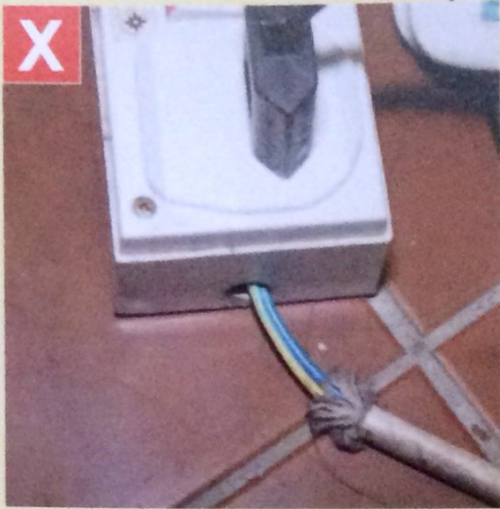
Main causes of electrical accidents

Workers in food areas are exposed to electrical accidents from:

- Unsafe work practices.
- Worn or faulty electric cords, equipment and wiring.
- Wet clean-up processes.

Reduce the risk of electrical accidents

- Never unplug an object by pulling on the cord. Grasp the plug to pull it out.
- Not over loading the power sockets.
- Ensuring appliances are turned off when not in use.
- Keep electrical cords away from sinks and water.
- Not using appliances with damaged plugs or exposed wires.
- Do not allow electrical cords to drape over counters.



Do not use electrical devices without proper insulation.

- Don't touch electric items with wet hands.
- Turn off & unplug machinery before cleaning or maintaining them.
- Handling the appliance as instructed.
- Use personal protective equipment when use electrical machines.

Manual handling

Manual handling is when you use your body to lift, carry, push or pull a load, manual handling is the most common cause of injuries leading to absence from work.

Do not do anything to cause injury to yourself or others.

If there are other means to help you lift, carry, push or pull a load, then use them.



Manual handling include;

- Lifting and putting down
 - Pushing and pulling
 - Carrying or moving a load
- Plan ahead before lifting. Knowing what you're doing and where you're going will prevent you from making awkward movements while holding something heavy. Clear a path, and if lifting something with another person, make sure both of you agree on the plan.
 - Lift close to your body, feet shoulder width apart, bend your knees and keep your back straight, lift with your legs and not your back.



Exposures to chemicals can cause many different types of harm, ranging from mild irritations to cancer.

Examples of hazardous substances include cleaning agents, disinfectants and agents, pesticides, dust, vapour, fume and gas.

Hazardous substances

There are three routes of entry:

- Ingestion – swallowing the chemicals.
- Inhalation – breathing in the chemicals.
- Absorption – the chemicals soaks through the skin.

Reduce the risk of hazardous substances

- Use good work techniques that avoid or minimize contact with harmful substances and minimize leaks and spills. Store cleaning products safely.
- Keep the workplace well ventilated.
- Wash your hands properly and consistently, particularly after use or contact with chemicals.
- Use personal protective equipment (e.g. gloves, respiratory protection).
- Never mix of different types of chemicals (particularly cleaning and disinfection materials).
- Must be adhered to follow safety instructions (printed on the packaging or material safety data sheet).
- Ensure that all chemical containers are properly labelled.
- Keep dry hands as much as possible.

Irritant



Flammable



Explosive



Toxic



Corrosive



Dangerous
to the
environment



Hazard symbols

Fumes

Cooking fumes contain substances such as carbon monoxide which can lead to an increased likelihood of diseases.

Reduce the risk of hazardous fumes

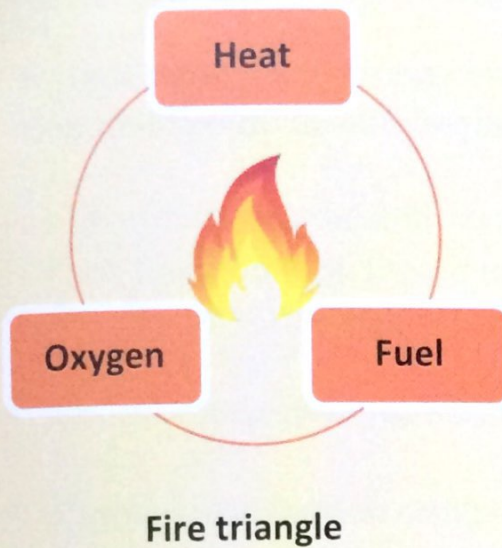
- Not be exposed to cooking fumes for long periods.
- Use protective equipment.
- Keep good ventilation in work area.

Dust

Workers in bakeries and confectionery industries are always susceptible to dust flour containing enzymes, flavors and also spices.

Reduce the risk of hazardous dust

- Use protective equipment.
- Work carefully and avoid raising dusts when loading and mixing.
- Clean up safely.



Hazards of fire

Hazards of fire:

- Smoke and toxic fume causing suffocation.
- Flames and heat causing burns.
- Explosive causing facilities and equipment damage.

Things must be present at the same time in order to produce fire:

1. Source of heat.
2. Source of fuel (wood, paper, oil, textiles, flammable gases, etc.).
3. Oxygen.

The causes of fires in food establishments

- Plugs are loaded with more than its capacity.
- Burning clothes.
- Accumulate fat on the exhaust system.
- Pans warm-up too much.
- Misuse of electrical equipment.
- Smoking.



Heat sources include:

- Equipment getting too hot
- Hot liquids such as fat in fryers



Always make sure the exits are clear and without a boundaries. And be sure to have access to fire-fighting equipment within the facility.



Cleaning exhaust hoods is especially important, since grease buildup can restrict air flow.

Reduce the risk of fire

- Storage of flammable materials away from sources of heat and flame. Keep oils away from stoves and flame sources.
- Use clean and dry equipment and tools and don't wear large clothing while cooking.
- Be sure to clean the hoods periodically.
- Do not leave the workplace during the missions.
- Always make sure the exits are clear and without a boundaries. And be sure to have access to fire-fighting equipment within the facility.

In case of fire in food establishments

- Must follow the safety instructions in the place accurately.
- If you find fire, you must initiate the fire alarm system and inform the others in place.
- Do not take the initiative to fight the fire that were not previously trained to fight, or if the fire is simple and available means of fire.
- Left the area (according to the evacuation plan) and closed the door behind you after making sure there is no one.
- Escape to the nearest emergency exit and headed to the area of assembly.

Personal protective equipment (PPE)

Personal protective equipment is special clothing and equipment that places a barrier between responders and the hazards they encounter.

Food handlers responsibilities for equipment

- Use PPE as instructed.
- Ensure that it fit for you and in good conditions.
- Remind your colleagues to use PPE.



Masks are to protect from hazardous materials as dust or chemicals.



Gloves are to protect hands from chemicals, cuts, low and high heat, electricity.



Coats are to protect body from low temperatures in refrigerators.



Glasses are to protect eyes from liquids, and strong light.



Metal aprons are to protect the lower part of body from wounds. (butchery electric saw).



Protective shoes to protect feet from water.



First aid box with valid contents must be provided, and staff should be trained to deal with minor incidents.

First aid kit

Listed below are the suggested contents as per the Red Cross first aid manual.

- 10 adhesive dressings
- 3 medium sized sterile dressings
- 1 large sterile dressing
- 1 extra large sterile dressing
- 1 sterile eye patch
- 2 triangular bandages
- 2 crepe roller bandages
- 1 pair plastic or surgical gloves
- 6 safety pins
- 1 pair tweezers
- 1 pair scissors
- Wound cleansing wipes
- Note pad & pencil

Food Safety and Health and Safety in The Workplace Level 1

- Explain food and water risks and food safety requirements.
- Focus on good practices for cleaning and sanitation for personnel and facilities.
- Statement methods for safe food handle and operations.
- An idea of the HACCP system (Hazard Analysis and Critical Control Points).